
XXI. *Remarks on Hypnum recognitum, and on several new Species of Roscoea; in a Letter to William George Maton, M.D. F.R.S. V.P.L.S., from Sir James Edward Smith, M.D. F.R.S. Pres. L.S.*

Read December 5, 1820.

MY DEAR SIR,

PERMIT me to offer you a few remarks, relating to Botany, made last summer in the course of a journey to Liverpool.

I was happy to find the Botanic Garden there in a very flourishing state, and a taste for the scientific study of plants becoming more and more prevalent. The greatest curiosities in that collection perhaps were *Nepenthes destillatoria*, raised, in great plenty, from East Indian seeds, and beginning to show the singular appendage to its leaves; as well as a new *Cypripedium*, and the *Paris polyphylla*, Rees's Cyclopædia, vol. 26, both brought alive from Nepal. *Serapias Lingua* from the south of Europe was scarcely less rare or interesting.

The garden is peculiarly rich in hardy perennial plants, especially of the natural orders of *Compositæ* and *Caryophyllææ*. I never before met with the true *Arenaria saxatilis*, either in a living or dried state, except in the Linnæan Herbarium; what Mr. Hudson and many others have taken for this species being nothing more than *A. verna*.

Among the greenhouse plants I was shown a fine bush of *Willdenovia teres*, in full flower, a plant hitherto unknown to some of my most learned friends in the metropolis, of which I inclose a specimen.

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The Ferns, chiefly raised from seed by Mr. Henry Shepherd, according to the method of which an account has been published in the Transactions of the Horticultural Society *, are beyond all example copious and luxuriant in the Liverpool stoves; as are the scitamineous plants, to which last one large hot-house is exclusively allotted. There the singular property of some new species of *Curcuma*, perhaps not confined to them alone, of secreting, and retaining in their *bracteæ*, a copious watery fluid, has been first observed. Among the various specimens, both living and dried, of this natural order, which Mr. Roscoe, still intent upon their study, has received from Dr. Wallich of Calcutta, and which are chiefly the produce of Nepal, we have recognised four new species of *Roscoeia*, in addition to the *purpurea*, discovered in that country by Dr. Hamilton, on which I founded the genus, in *Exotic Botany*. By these I was enabled to confirm, and in some degree to improve, the generic character, as well as to define all the species, under the superintendence of my learned friend. Till either of us can give a more ample account of these plants, I beg leave here to present you with their generic and specific distinctions.

ROSCOEIA. *Sm. Exot. Bot. v. ii. 97.*

ESS. CHAR. *Anthera* biloba, incurva, terminalis, stylum vaginans; basi bicalcarata. *Corolla* ringens, limbo duplici; labio superiore fornicato. *Calyx* monophyllus, tubulosus.

1. *R. purpurea*; *Exot. Bot. t. 108*; spicâ foliorum vaginis obvolutâ, calyce obliquo integro.
2. *R. gracilis*; spicâ exsertâ pauciflorâ laxâ, calyce retuso.
3. *R. elatior*; spicâ exsertâ multiflorâ subcoarctatâ, calyce retuso.

* Vol. iii. p. 338.

4. *R. spicata* ; spicâ exsertâ multiflorâ coarctatâ, calyce emarginato nudo, foliis lanceolatis.
5. *R. capitata* ; spicâ exsertâ capitatâ multiflorâ, calyce bicuspidato ciliato, foliis linearibus.

These new species all partake, more or less, of the habit of the original one, and are well distinguished by characters derived from the calyx, that being the part, in *Roscoea*, in which the real specific differences principally reside.

Returning by Matlock, I spent a fortnight, in the latter part of July, in revisiting that beautiful scenery, which I have, in the course of thirty years, so often explored. Here I had gathered, in 1790, the *Hypnum recognitum* ; but for want of noting the precise spot, I had never been able, in any subsequent visit, to find this rare and elegant moss again ; nor has any other botanist, I believe, ever noticed it in Britain. It grows, copiously enough, among some large massy stones and rocks, overshadowed with trees and brush-wood, behind the principal inn, called the Hall. A steep and devious path, of difficult ascent, leads up the hill to these rocks, which, being mentioned in *English Botany* by the epithet of romantic, have obtained exclusively the appellation of “ the Romantic Rocks,” and are pointed out by the guides to strangers under that name. Here grow *Paris quadrifolia*, *Polypodium calcareum*, and numerous, though not the most uncommon, *Orchideæ*.

The *Hypnum recognitum* clothes the surface of these shady broken rocks, and fills up many of their interstices, in loose patches or tufts ; but the capsules are rather uncommon. They are perfected in July or August.

This moss being, as I trust, clearly defined in the *Flora Britannica*, and figured in *English Botany*, tab. 1495, I am some-

what surprised at the obscurity in which it is involved in the *Muscologia Britannica*, where it is not allowed the rank of a species, or even of a variety, being altogether confounded with the common *Hypnum proliferum*. Neither are the above works, where alone it has hitherto been announced as a British plant, cited at all! I am very sure this omission, like several similar ones, arises from no disrespect, either to these books or their author. The confusion and mistakes in the references given in the *Muscologia*, which I must now correct, prove this article not to have received the usual attention of the able writers of that work, Professor Hooker and Dr. Taylor, to which alone I attribute every omission as well as mistake.

Hypnum proliferum, so admirably delineated in the *Flora Londinensis* of Mr. Curtis, fasc. i. t. 72, stands in p. 103 of the *Muscologia* with the following references, the figure just mentioned being unaccountably neglected.

“ *H. proliferum*. Linn. *Sp. Pl.* p. 1590. *Turn. Musc. Hib.*
 “ p. 156. *Engl. Bot.* t. 1494. *H. tamariscinum*. Hedw. *St.*
 “ *Cr. v. iv. t. 3. Moug. et Nestl. n. 41. H. recognitum*. Hedw.
 “ *Sp. Musc. t. 67. f. 1—5. H. delicatulum*. Hedw. *St. Cr. v. iv.*
 “ *t. 35. H. parietinum*. Willd. ————. *Dill. Musc. t. 35.*
 “ *f. 14. et t. 38. f. 6.*”

Of these, *Turn. Musc. Hib.* should be 157, a matter indeed of little importance. The synonym is correct, as are the references to Linnæus, and English Botany, and to *H. tamariscinum* of Hedwig; but it should be his *Sp. Musc. t. 67. f. 1—5*, as quoted in *Fl. Brit.*, not his *Stirpes Cryptogamicæ. H. delicatulum* of Hedw. *Stirp. Crypt.*, which is t. 33 of that work, not 35, and which is also t. 83. f. 6. of Dillenius, not 38. f. 6, is asserted by Hedwig to be undoubtedly a different species; nor have I a doubt that what he received from Dr. Muhlenberg, and
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has figured in detail, is so. This is bipinnate. His *f. 2.* is exactly copied, without acknowledgment, from the figure of Dillenius, *t. 83. f. 6.*, coloured gratuitously! This is tripinnate. Its coming from Pennsylvania does not prove it the same species. The plant of Dillenius is indeed what Linnæus meant for *H. delicatulum*; but there is no specimen in the Linnæan Herbarium, nor have I examined that which I presume to be preserved at Oxford. This *delicatulum* may be a small variety of the *proliferum*, which species is found in various quarters of the globe; but, though well aware of that circumstance, I durst not, in the *Flora Britannica*, refer to this plant of Dillenius, and still less to the obviously different bipinnate one of Hedwig. But I have cited, without scruple, the Europæan *H. delicatulum* of Schrader's *Spicilegium* 73, and *H. delicatum* of Ehrhart's *Cryptogamia*, *n. 301*, from a comparison of specimens. Both these synonyms are omitted in the *Muscologia*. Dillenius's *tab. 35. f. 14.*, is unquestionably right, as quoted by all authors. The synonyms of Haller, Vaillant and Morison, to be found under this species in *Fl. Brit.*, are well worthy of notice, though left out of the *Muscologia*. Vaillant's representation of *H. proliferum*, *t. 25. f. 1.*, though correct, being smaller, and far less specious, than that of *H. splendens*, *t. 28. f. 1.*, and especially *t. 29. f. 1.*, has caused a general confusion amongst foreign botanists; cleared up, I trust, by authentic records, and not without some pains, in the *Flora Britannica*; which work might perhaps, according to general usage, and not without advantage, have been quoted in the *Muscologia*.

So much for the real *H. proliferum*. The rest of the synonyms, though not separated, belong to the *recognitum*, just now recognised, after a lapse of thirty years, at Matlock.—These are,

H. recognitum. Hedwig. *Stirp. Crypt. v. iv. t. 35.*, and *Sp. Musc. p. 261*; not *t. 67. f. 1—5* of the latter work; neither is

it *delicatulum* of the *Stirp. Crypt. t.* 35, which ought, as above mentioned, to have been quoted *t.* 33. It is indeed *H. delicatulum* of Willdenow's *Prodromus*, and, according to Hedwig, of the generality of Europæan Floras on the continent. The plate of *Engl. Bot. t.* 1495, is not noticed in the *Muscologia*.

This moss is probably to be found in other parts of Britain, though as yet not noticed by any botanist. I am very sure my friends, whom I have thus freely corrected, can never have examined a specimen, or they could not have confounded it with the *H. proliferum*, from which it differs in not being above half so large, of a less rich and beautiful green, with only bipinnate, not tripinnate, stems, and a short conical lid, instead of one with a long taper beak. Having now compared these two species, in a fresh state, I can speak to their distinctions even more decidedly than I could in the *Flora Britannica*.

The *Cyathea fragilis* of *Fl. Brit.* (*Polypodium fragile* of Linæus) assumes many different appearances at Matlock, inso-much that I had flattered myself with having found a new species there in the autumn of 1818. But having sowed the seeds of this and the common kind, according to Mr. Henry Shepherd's method, the plants produced, now growing in perfection, prove not even varieties of each other. *Polypodium calcareum* was raised at the same time; as well as a kind of *Aspidium*, from the high rocks on Cromford moor, like the common *dilatatum*, but smaller, of a darker green and more rigid habit. This last is a mountain plant, found also in Scotland, and I have often thought it might prove a distinct species. Notwithstanding all possible care, I have not been able to cultivate it with any success, so as to determine this point.

I remain, &c.

Norwich, Nov. 30, 1820.

J. E. SMITH.